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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/430,491	10/29/99	WILKINS	S XRAYT:52817

MM92/0406

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EXAMINER

DUNN, D

ART UNIT	PAPER NUMBER
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2876

DATE MAILED: 04/06/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/430,491

Applicant(s)
Wilkins

Examiner
Drew A. Dunn

Group Art Unit
2876



☒ Responsive to communication(s) filed on Jan 10, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 43-77 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 43-77 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on Oct 29, 1999 is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☒ received in Application No. (Series Code/Serial Number) 08/930,049.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---



Paper No. 4

Application Number: 09/430,491

Filing Date: 10/29/99

Applicant(s): Wilkins et al.

DETAILED ACTION

Priority

Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

The second application (which is called a continuing application) must be an application for a patent for an invention which is also disclosed in the first application (the parent or provisional application); the disclosure of the invention in the parent application and in the continuing application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *In re Ahlbrecht*, 168 USPQ 293 (CCPA 1971).

The current application (09/430,491) repeats a substantial portion of prior Application No. 09/930,049, filed 03/28/96, and adds and claims additional disclosure not presented in the prior application. Since this application names an inventor or inventors named in the prior application, it may constitute a continuation-in-part of the prior application. Should applicant desire to obtain the benefit of the filing date of the prior application, attention is directed to 35 U.S.C. 120 and 37 CFR 1.78.

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As such, the current priority of the present application is objected to and should be filed under the rules governing Continuation-in-Part applications with the filing of an appropriate oath/declaration.

Correction is required.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "means for processing the image" must be shown or the feature(s) cancelled from the claim(s). No new matter should be entered.

Specification

The abstract of the disclosure is objected to because it fails to disclose the concept of processing the image as is deemed an integral component of the claimed invention. Correction is required. See MPEP § 608.01(b).

The following guidelines illustrate the preferred layout and content for patent applications. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

The disclosure is objected to because of the following informalities: the headings for each section in the specification are missing.

Appropriate correction is required.

The following order or arrangement is preferred in framing the specification and, except for the reference to "Microfiche Appendix" and the drawings, each of the lettered items should appear in upper case, without underlining or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) Title of the Invention.
- (b) Cross-References to Related Applications.

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- (c) Statement Regarding Federally Sponsored Research or Development.
- (d) Reference to a "Microfiche Appendix" (see 37 CFR 1.96).
- (e) Background of the Invention.
 - 1. Field of the Invention.
 - 2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) Brief Summary of the Invention.
- (g) Brief Description of the Several Views of the Drawing(s).
- (h) Detailed Description of the Invention.
- (i) Claim or Claims (commencing on a separate sheet).
- (j) Abstract of the Disclosure (commencing on a separate sheet).
- (k) Drawings.
- (l) Sequence Listing (see 37 CFR 1.821-1.825).

The disclosure is further objected to because of the status of the parent case, Ser. No. 08/930,049 has not been updated to recite, --now U.S. Pat. No. 6,018,564.--

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

1) though there is mention of "processing phase-contrast image data of said image" found on page 3 line 25, the specification fails to provide proper support for the claimed method and apparatus for "processing said image so as to derive from the image said corresponding variation in the detected intensity of said wavefront in said image and so identify the representation of the boundary";

2) further, though the drawings illustrate "the irradiation of the boundary with an unfocused propagated wavefront of X-rays and detection of the X-rays passing through the boundary without focusing said wavefront" as claimed in claims 45, 56, 62 and 76, the specification fails to adequately describe this claimed subject matter.

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Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 43-77 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7, 13-16, 18-24, 30, 32-35, 39-46 and 50-54 of U.S. Patent No. 6,018,564 in view of Momose (U.S. Pat. No. 5,715,291).

U.S. Pat. No. 6,018,564 to Wilkins claims or discloses almost everything claimed in claims 43-77 including the concept of processing phase contrast image data of said image (see column 2 lines 52-54), but fails to suggest the method or means for processing the image so as to derive from the image a corresponding variation in the detected intensity of said wavefront in said image and so identify the representation of the boundary.

Momose discloses a phase-contrast X-ray CT apparatus wherein a propagated X-ray wavefront 2' changes to a wavefront 3' due to a phase shift caused by the object 1 (see figure 1 and column 2 lines 14+). Further, though Momose fails to disclose the irradiation of the boundary/object with a propagated wavefront of X-rays having high lateral spatial coherence and propagation components transverse to said refractive index variation, Momose does teach having

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the wavefront pass through the boundary/object, being reflected by a crystal 4 towards an image sensor 6 which records the diffraction intensity (see column 3 lines 9+). Lastly, Momose teaches the analysis of the detected intensity of the wavefront to achieve an image which inherently is representative of the boundary.

As such, the claimed invention in the present application would have been obvious to one of ordinary skill in light of Wilkins' (6,018,564) claims and limited disclosure of processing the image combined with Momose's more in-depth teaching of processing the image by using the detected intensity of the wavefront to achieve an image which alleviates the need for an interferometer and in turn increases the precision of the optical system so as to provide an overall system with enhanced phase-contrast imaging using hard X-rays.

With specific regards to claims 45, 56, 62 and 76, these claims recite the irradiation of the boundary with an unfocused propagated wavefront of X-rays and detection of the X-rays passing through the boundary without focusing said wavefront. This limitation is inherently illustrated in the 6,018,564 patent and there is no teaching to focus the X-rays at either end of either the irradiation or detection. As such, these claims would have been obvious to one of ordinary skill in the art in view of the fact that this is the only teaching of irradiating and detecting disclosed the 6,018,564 patent.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Drew A. Dunn** whose telephone number is (703) 305-0024. The examiner can normally be reached between the hours of 8:00AM to 4:00PM Monday thru Thursday and every other Friday (second Friday of the bi-week).

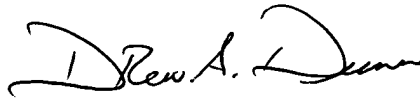
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald T. Hajec, can be reached on (703) 308-4075. The fax phone number for this Group is (703) 308-7722 or (703)308-5841.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [don.hajec@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Drew A. Dunn
4 April 2000